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Chironomids of the Diamesinae (Diptera, Chironomidae)
from Japan
V. New and Little-Known Species of
Diamesa MEIGEN¹⁾

Evgenyi A. MAKARCHENKO

Institute of Biology and Pedology, Far East Branch of Russian
Academy of Science, Vladivostok 690022, Russia

and

Masaru YAMAMOTO

Kankyou-kagaku Kabushiki-gaisha, Fukkou Dai-iti Bld., 2–21–7,
Naka-Sakurazuka, Toyonaka, Osaka 560, Japan

Abstract The male of *Diamesa tokunagai* sp. nov. from Gifu Pref., Japan is described. The male of *D. plumicornis* TOKUNAGA is also redescribed.

Key words: Chironomidae; Diamesinae; *Diamesa*; taxonomy; Japan.

Up to the present Genus *Diamesa* MEIGEN is represented by 10 species from Japan. They are *D. alpina* TOKUNAGA, *Dastyla* TOKUNAGA, *D. bertrami* EDWARDS, *D. dactyloidea* MAKARCHENKO, *D. japonica* TOKUNAGA, *D. gregsoni* EDWARDS, *D. leona* ROBACK, *D. plumicornis* TOKUNAGA, *D. tsutsuii* TOKUNAGA and *D. bernalis* MAKARCHENKO. Most species were described by TOKUNAGA (1936) and well identified by using his diagnostic characters and figures of hypopygia. Some species, however, need to be redescribed because TOKUNAGA has not given them the detailed pictures of structures of hypopygia.

We will describe a new species, *Diamesa tokunagai* sp. nov., and also redescribe the male of *D. plumicornis* in the following lines.

The terminology follows SAETHER (1980), WILLASSEN (1985) and OLIVER & DILLON (1989).

The holotype of *D. tokunagai* sp. nov. and the lectotype of *D. plumicornis* are deposited in the collection of National Science Museum (Nat. Hist), Tokyo.

1) Parts I and II of this investigation were published in *Bull. Natn. Sci. Mus., Ser. A, Tokyo*, 19(3) and 20(1). Part III is publishing in the same Bulletin. Part IV was published in *Jpn. J. Ent.*, 62(4).

Diamesa tokunagai MAKARCHENKO et YAMAMOTO, sp. nov.

(Fig. 1)

Type material. Holotype; ♂. Futatsuya, Hida-kawai Gifu Pref., Honshu, Japan, 11. vi. 1977, light trap, M. YAMAMOTO leg.

Diagnostic characters. The adult male of *Diamesa tokunagai* sp. nov. is similar to that of *D. alpina* TOKUNAGA, but is distinguishable from the latter by the bilobate segment IX (*D. alpina* has trilobate segment IX) without anal point (Figs. 1–2) in the hypopygium.

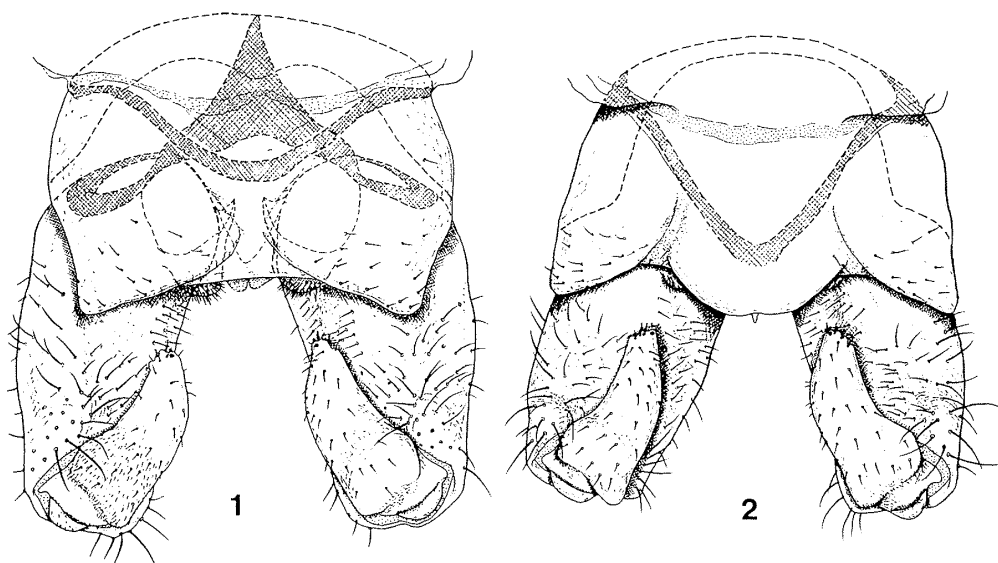
Etymology. Named in honor of the famous Japanese taxonomist of Diptera Dr. M. TOKUNAGA.

Male imago. Color dark brown, antenna brown, wing dark gray, legs brown. Body length 3.4 mm, body length/wing length 1.2.

Head. Eye hairily, without dorsal extention. Verticals 6–7, orbitals 1–3, postorbitals 0, clypeals 3 (33–36 μm). Antenna with 8 flagellomeres, plume reduced. Antennal flagellomere lengths (μm): 108.9: 49.5: 42.9: 36.3: 33.0: 29.7: 36.3: 112.2; antenna length/maxillary palpus length 1.47; 1st flagellomere with 4 setae (16.5–36.3 μm), 2nd to 7th flagellomeres each with 2–6 setae (26.4–42.9 μm), ultimate flagellomere with 4 basal setae (39.6–52.8 μm) and 2 subapical setae (13.2–19.8 μm); AR, 0.33. Length of last 4 palpal segment lengths (μm): 59.4: 92.4: 62.7: 128.7. Head width/palpal length 1.29.

Thorax. Anteprenotum with 4 ventrolateral setae. Dorsocentrals 8–9, prealars 3–4, scutellars 16.

Wing. Length 2.86 mm, width 0.93 mm, R and R_1 with 16–18, R_{4+5} with



Figs. 1–2. Male Hypopygia, dorsal aspects (phallapodemes are omitted). — 1, *D. tokunagai* sp. nov.; 2, *D. alpina*.

7 macrotrichia. RM/MCu 1.8. Squama with 11 setae (59.4–79.2 μm).

Legs. BR₁ 1.3, BR₂ 1.9, BR₃ 1.8. Front tibial spur length 39.6 μm ; anteroventral spur of middle tibia 39.6 μm in length, posteroventral one 42.9 μm ; anteroventral spur of hind tibia 39.6 μm in length, posteroventral one 62.7 μm . Hind tibial comb composed of 16 spines.

Lengths and proportions of legs:

	F	T	Ta ₁	Ta ₂	Ta ₃	Ta ₄	Ta ₅	LR	SV	BV
P ₁	1594	1527	1013	465	266	83	133	0.66	3.08	4.37
P ₂	1660	1361	664	315	249	100	116	0.49	4.55	4.72
P ₃	1693	1560	976	548	266	116	149	0.63	3.33	3.92

Hypopygium (Fig. 1). Segment IX bilobate in dorsal view; dorsal part of hypandrium (laterosternite) very large, occupies the greater part of dorsum of segment IX, strongly extending posteriorly. Tergite IX small, indistinct in structure, without anal point. Anal tergal bands broad and U-shaped; sternapodeme triangular with a pointed apex; volsella fairly well developed, flap-like projection from distomedial margin of basal foramen, and with microtrichia and short setae. Gonostylus broad basally, tapering toward apex, weakly curved inwardly, and with 3–4 apical teeth, 2–3 subapical setae and a subterminal peg. Gonostylus length/gonostylus width 2.54–2.57; HR 2.04.

Female and immature stages unknown.

Distribution. This species is known from the type locality only.

Diamesa plumicornis TOKUNAGA

(Figs. 3–6)

Diamesa plumicornis TOKUNAGA, 1936: 548; 1937 a; 55: 1937 b: 62; GOETGHEBUER, 1939: 27.

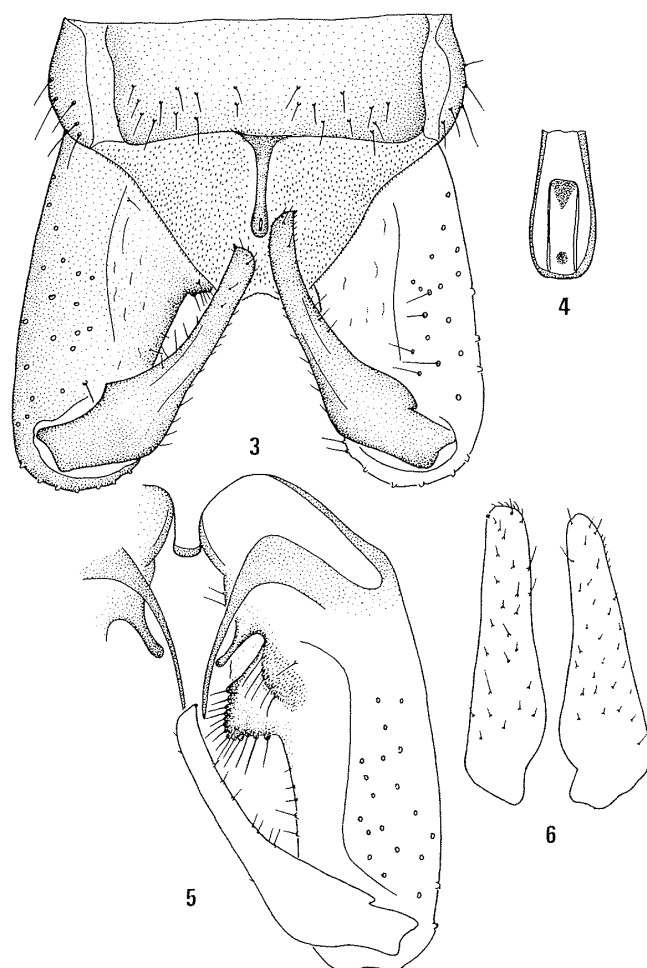
Materials examined. Lectotype: ♂, Kashima, Nagano Pref., Japan, 13. x. 1930, K. IMANISHI leg. Another materials: 3♂♂, Toyamazawa R., Nikko Nat. Park, Tochigi Pref., Japan, 21. ix. 1988, R. UENO leg.

Male imago. Color brown or dark brown, antenna brown with dark brown or black setae, wing dark gray, legs brown. Body length 5.5–5.7 mm, body length/wing length 1.1–1.2.

Head. Eye hairy, not extended dorsomedially. Antenna composed of 13 flagellomeres, with plume; AR 1.1–1.3. Second to 5th maxillary palpal segment lengths (μm): 90: 135: 140: 215. Head width/palpal length 0.85–0.90.

Thorax. Antepnotum with 6–8 ventrolateral setae. Dorsocentrals 11–12, prealars 6–8, scutellars about 40.

Wing. Length 4.8–5.0 mm, R and R₁ with 19–21, R₄₊₅ with 8 macrotric-



Figs. 3–6. Male hypophgium of *D. plumicornis*. — 3, Dorsal aspect; 4, apical part of anal point; 5, gonocoxite and gonostylus, dorsal aspect; 6, gonostylus, lateral aspect.

hea. Squama with 26 setae.

Legs. BR_1 2.4, BR_2 1.9, BR_3 1.3. Front tibial spur length $65\mu\text{m}$; anteroventral spur of middle tibia $60\mu\text{m}$ in length, posteroventral one $65\mu\text{m}$; anteroventral spur of hind tibia $65\mu\text{m}$ in length, posteroventral one $90\mu\text{m}$. Hind tibial comb composed of 13 spines.

Lengths and proportions of legs:

	F	T	Ta ₁	Ta ₂	Ta ₃	Ta ₄	Ta ₅	LR	SV	BV
P ₁	1384	1667	1131	515	323	101	131	0.68	2.70	4.27
P ₂	1495	1353	717	343	212	101	145	0.53	3.97	4.45
P ₃	1667	1768	1131	586	313	121	131	0.64	3.04	3.97

Hypopygium (Figs. 3–6). Tergite IX with 10–11 setae, laterosternite IX with 5–8 setae. Anal point dark, digitiform, rounded apically and with a

subapical pore (Figs. 3–4). Aedeagal lobe long and narrow. Median field of gonocoxite with two basal projections, basal one digitiform (Fig. 5); basimedial setal cluster absent. Gonostylus slender, slightly curved inwardly, widened at basal 1/3 and gradually tapering to apex, and with a short megaseta.

Remarks. This species is similar to *D. lindrothi* and must be included in *Diamesa* gr. *latitarsis* because the member of this group also have two basal projections of median field of gonocoxite. But the male of *D. plumicornis* is distinguished from another species of this group by the shape of gonostylus, anal point and basal projection of the gonocoxite.

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